Name: Date:

Exam: Function Reflections (Practice version 3)

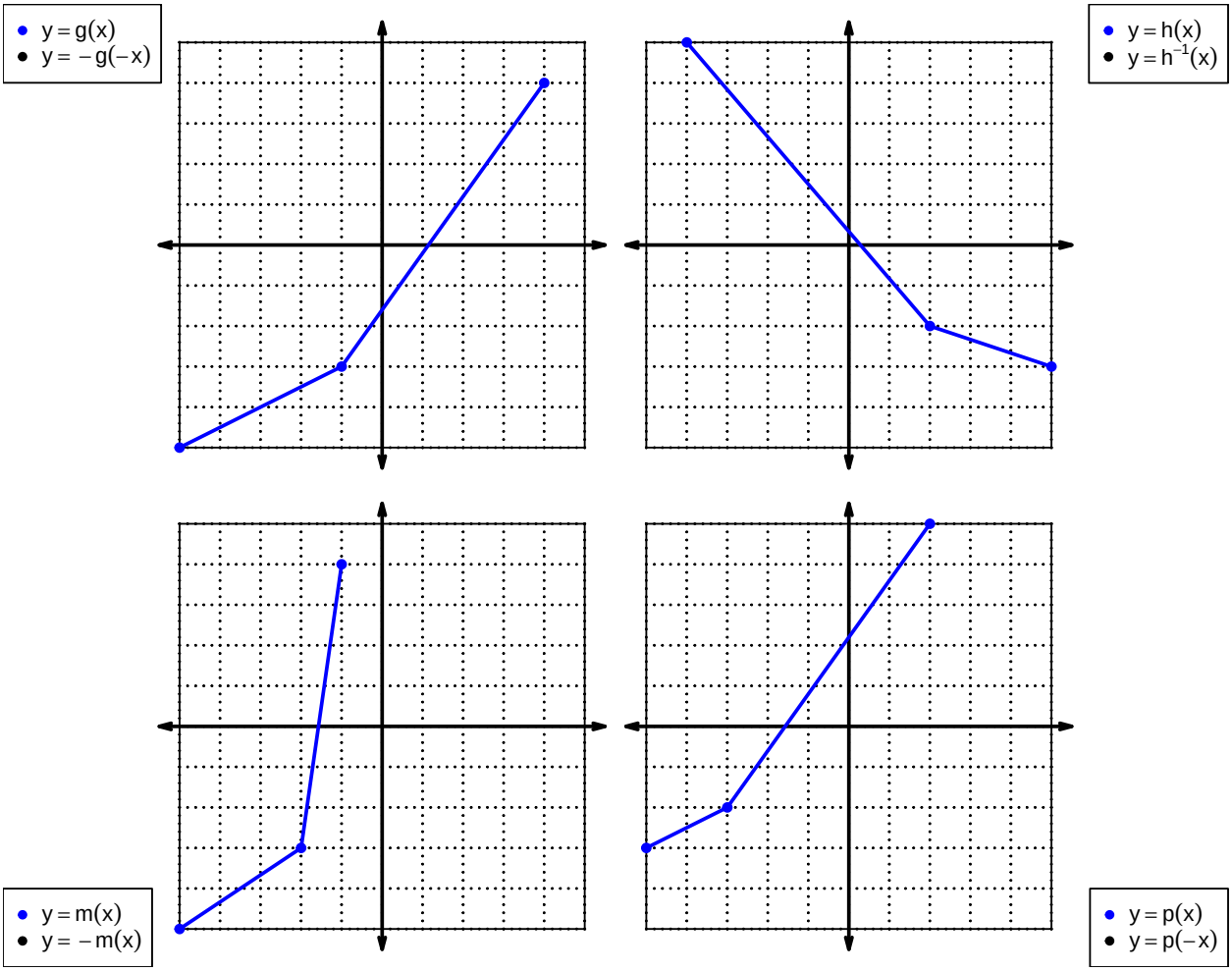
1. Let function f be defined by the polynomial below:

$$f(x) = -3x^4 - 5x^3 + 8x^2 + 9x + 7$$

Draw lines that match each function reflection with its polynomial:

Reflections	Polynomials
$-f(-x)$	$-3x^4+5x^3+8x^2-9x+7$
$-f(x)$	$3x^4+5x^3-8x^2-9x-7$
$f(-x)$	$3x^4-5x^3-8x^2+9x-7$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.



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For all questions on this page, the functions f, g, and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	2	6	3
2	7	3	4
3	8	4	5
4	1	7	7
5	4	1	9
6	6	8	8
7	9	5	1
8	5	9	2
9	3	2	6

3. Evaluate $h(7)$.

4. Evaluate $f^{-1}(8)$.

5. Assuming g is an **odd** function, evaluate $g(-5)$.

6. Assuming h is an **even** function, evaluate $h(-6)$.

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7. A function, f, is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g, is **odd** if $g(x) = -g(-x)$ for all x in the domain.
   Let polynomial p be defined with the following equation:

$$p(x) \;=\; -x^2 - 1$$

   a. Express $p(-x)$ as a polynomial in standard form.

   b. Express $-p(-x)$ as a polynomial in standard form.

   c. Is polynomial p even, odd, or neither?

   d. Explain how you know the answer to part c.

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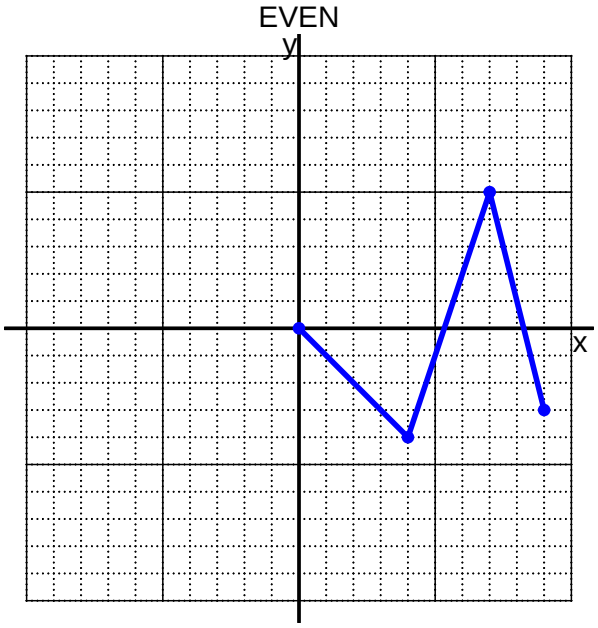
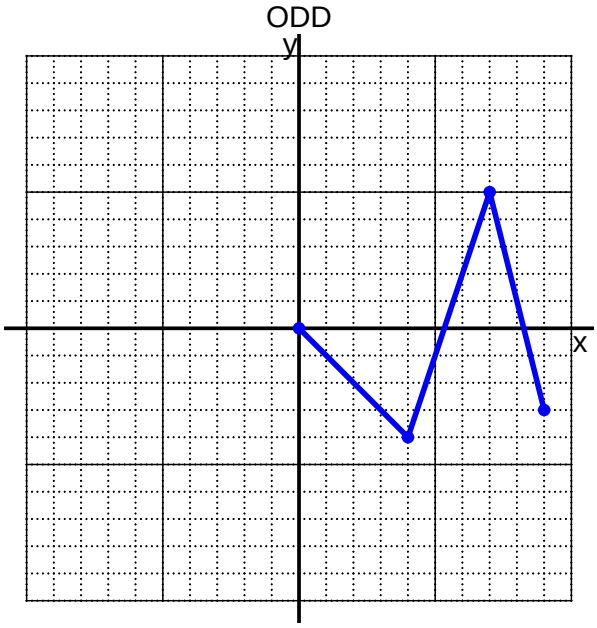
8. I have drawn half of a function. Draw the other half to make it even or odd.





9. Let function f be defined with the equation below.

$$f(x) = \frac{x}{9} + 4$$

a. Evaluate $f(99)$.

b. Evaluate $f^{-1}(7)$.

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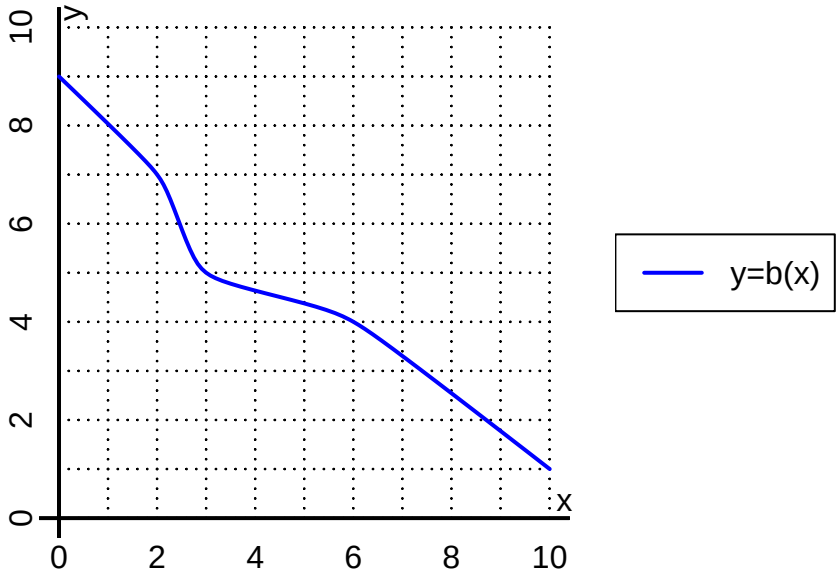
10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(2)$.

b. Evaluate $b^{-1}(5)$.

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11. Function f is defined by the table below.

    a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	-5			
-1	7			
0	0			
1	-7			
2	5			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?